

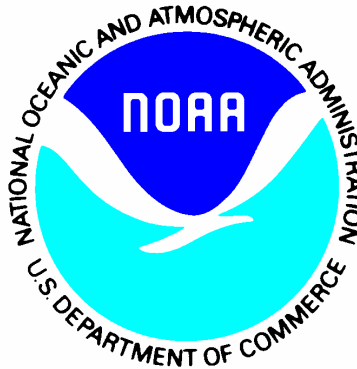
**NOAA**

**National Weather Service**

National Centers for Environmental Prediction

(NCEP)

Environmental Modeling Center (EMC)



## **Real-Time Ocean Forecast System (Atlantic)**

### **Data / Product Submission Agreement**

Version 1.0 August 2007

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## Product / Data Submission Agreement

### ***Dataset Identification Information:***

Dataset Title: RTOFS(Atlantic) Nowcast and Forecasts

Originator: NOAA/NWS/NCEP/EMC/MMAB (Marine Modeling and Analysis Branch)

### ***Dataset Description:***

The purpose of the NOAA Real-Time Forecast System (Atlantic) is to generate daily nowcasts (*i.e.* analysis) and forecasts at 24 hour intervals out to 120 hours of ocean properties for the Atlantic Ocean including all of the coastal regions of the United States East and Gulf Coasts. The development of RTOFS(Atlantic) was started due to a growing demand for high-resolution basin-wide ocean information as well as improved surface forecasts in coastal areas. RTOFS(Atlantic) demand was recognized by the U.S. National Research Council which recommended that the nation establish an "operational capability for nowcasting and forecasting currents, water temperatures and related fields to support coastal and offshore operations and management" (National Research Council, 1989). Development of RTOFS(Atlantic) for the Atlantic, Caribbean and the Gulf of Mexico began in 2004.

### ***Technical Contact:***

Technical Contact Organization:

NOAA/NWS/NCEP/EMC (Environmental Modeling Center)

Technical Contact Person:

Dr. Avichal Mehra

Technical Contact Position:

Physical Scientist

Technical Contact Address

Address Type:

Physical and Mailing

Address:

5200 Auth Road

City:

Camp Springs

State or Province:

MD

Postal Code:

20746-4304

Country:

USA

Technical Contact Voice Telephone:

301-763-8000 ext 7208

Technical Contact TDD/TTY Telephone:

Technical Contact Facsimile Telephone:

Technical Contact E-Mail Address:

Avichal.Mehra@noaa.gov

### ***Designated Community:***

Des. Community Description:

Des. Community Requirements:

Des. Community Contact Organization:

Des. Community Contact Person:

Des. Community Contact Position:

Des. Community Contact Address

Address Type:

Address:

City:	_____
State or Province:	_____
Postal Code:	_____
Country:	_____
Des. Community Contact Voice Telephone:	_____
Des. Community Contact TDD/TTY Telephone:	_____
Des. Community Contact Facsimile Telephone:	_____
Des. Community Contact E-Mail Address:	_____
Des. Community Contact Person:	_____

***Metadata Contact:***

Metadata Contact Organization:	NOAA/NESDIS/NODC/NCDDC (National Coastal Data Development Center)
Metadata Contact Person:	Dr. Scott Cross
Metadata Contact Position:	Oceanographer
Metadata Contact Address	_____
Address Type:	Physical and Mailing
Address:	219 Ft. Johnson Rd.
City:	Charleston
State or Province:	SC
Postal Code:	29412
Country:	USA
Metadata Contact Voice Telephone:	843-762-8567
Metadata Contact TDD/TTY Telephone:	_____
Metadata Contact Facsimile Telephone:	_____
Metadata Contact E-Mail Address:	scott.cross@noaa.gov

***Data Submission Sessions:***

Transfer Protocol:	Secure FTP
URL:	_____
Login / password:	_____
Transfer Initiation Action:	_____
Acknowledgment	_____
Protocol:	_____
Duplicate File Action:	_____
Submission Schedule:	_____
Data Volume Schedule:	_____
Error Condition(s):	Data corruption during transmission or loss of connection
Error Action(s):	Retransmission of data file

### ***Submission Information Packages:***

File-naming Convention: **Curvilinear Coordinate Grid**

ofs\_atl.t00z.[lnnn].[3d.].grb

where

- l - one of the following
  - n - nowcast surface fields only.
  - N - nowcast full volume fields.
  - f - forecast surface fields only.
  - F - forecast full volume fields.
- nnn - the forecast hour. For nowcast, these numbers start at -23 and go forward to 000.
- 3d. - if present then the grib file contains all the output parameters and on the native grid. If not present, the files contain a reduced set of output parameters and, if full-volume (i.e. 'N' or 'F') fields, the data have been interpolated in the vertical dimension onto a set of standard depths. See below for details.

#### **A note for future expansion:**

The file naming convention refers to the Atlantic basin via “\_atl\_” in the file name (e.g. ofs\_atl\_t00z...). Subsequent model expansion to incorporate other oceanic basins will use additional basin codes (for example “pac” for Pacific or “ind” for Indian Ocean).

File Formats:

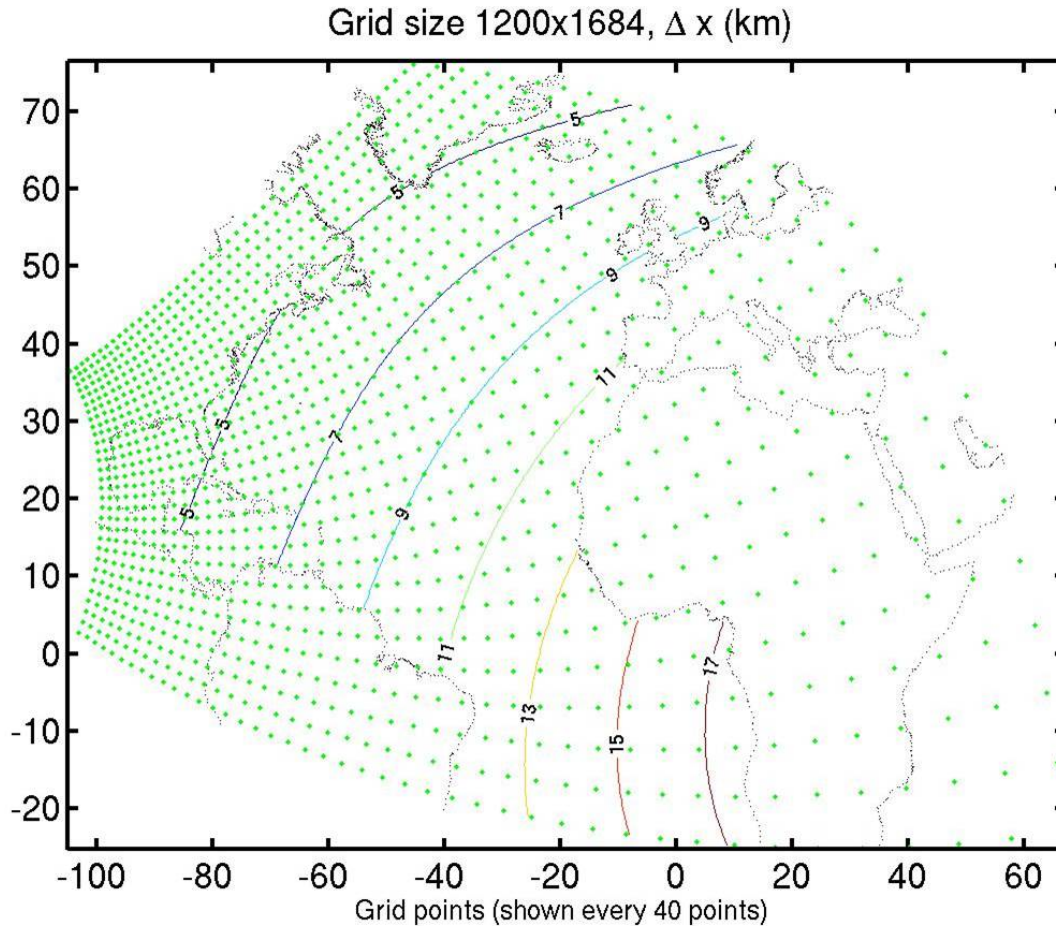
GRIB

Expected File Size:

Curvilinear coordinate grid files: 16.4 GB total per cycle for daily volumetric files, 124 MB total per cycle for hourly surface files

### ***Quality Information:***

- The model uses curvilinear coordinates in the horizontal and hybrid coordinates in the vertical.
- The orthogonal grid with 1/12 degree horizontal resolution is defined with 1200 x 1684 points (see Figure 1).



**Figure 1: Orthogonal Curvilinear Coordinate Grid**

- The model is defined on 26 vertical coordinates (21 isopycnal, 5 z-level). However, prior to June 06, 2007 the GRIB data contained in the archive has been interpolated to 40 fixed depths (meters): 0, 3, 6, 10, 20, 30, 50, 75, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500, 1750, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 5500, 6000.
- RTOFS produces many GRIB files. Surface fields are produced every hour and volume fields are produced every 24 hours. A 24 hour nowcast, or analysis, is run and is followed by a 120 hour forecast.

Examples of file types and their naming conventions:

<i>ofs_atl.t00z.F024.grb</i>	24 hour forecast, full volume at Z-levels
<i>ofs_atl.t00z.F024.3d.grb</i>	24 hour forecast, full volume at native levels
<i>ofs_atl.t00z.f001.grb</i>	1 hour forecast, surface only, partial set

Contents of the GRIB files (or fields within):

*ofs\_atl.t00z.F024.grb*

Geometric vertical velocity [m/s] - 40 Z-levels  
Sea Surface Height Relative to Geoid [m]  
Mixed layer depth [m]  
u of current [m/s] - 40 Z-levels  
v of current [m/s] - 40 Z-levels  
Temperature [C] - 40 Z-levels  
Salinity [psu] - 40 Z-levels  
Longitude of U wind component of velocity [deg]  
Latitude of U wind component of velocity [deg]  
Longitude of V wind component of velocity [deg]  
Latitude of V wind component of velocity [deg]  
Longitude of pressure point [deg]  
Latitude of pressure point [deg]

*ofs\_atl.t00z.F024.3d.grb*

Evaporation - Precipitation [cm/day]  
Latent heat flux [W/m<sup>2</sup>]  
Sensible heat flux [W/m<sup>2</sup>]  
Sea Surface Height Relative to Geoid [m]  
Montgomery stream function [m<sup>2</sup>/s<sup>2</sup>]  
U Velocity in mixed layer [m/s]  
V Velocity in mixed layer [m/s]  
Mixed layer depth [m]  
Temperature [C]  
Salinity [psu]  
Ocean Mixed Layer Potential Density (Referenced to 2000m) [kg/m<sup>3</sup>]  
Barotropic U Velocity [m/s]  
Barotropic V Velocity [m/s]  
u of current [m/s] - native levels  
v of current [m/s] - native levels  
Layer Thickness[m] - native levels  
Temperature [C] - native levels

Salinity [psu] - native levels  
 Density [kg/m<sup>3</sup>] - native levels  
 Longitude of U wind component of velocity [deg]  
 Latitude of U wind component of velocity [deg]  
 Longitude of V wind component of velocity [deg]  
 Latitude of V wind component of velocity [deg]  
 Longitude of pressure point [deg]  
 Latitude of pressure point [deg]

*ofs\_atl.t00z.f001.grb*

Sea Surface Height Relative to Geoid [m]  
 Montgomery stream function [m<sup>2</sup>/s<sup>2</sup>]  
 Mixed layer depth [m]  
 Barotropic U Velocity [m/s]  
 Barotropic V Velocity [m/s]  
 u of current [m/s]  
 v of current [m/s]  
 Temperature [C]  
 Salinity [psu]  
 Longitude of U wind component of velocity [deg]  
 Latitude of U wind component of velocity [deg]  
 Longitude of V wind component of velocity [deg]  
 Latitude of V wind component of velocity [deg]  
 Longitude of pressure point [deg]  
 Latitude of pressure point [deg]

***Data/Product Lineage:***

Process Description	_____
Process Date	_____
Process Time	_____
Process Contact Organization:	_____
Process Contact Person:	_____
Process Contact Position:	_____
Process Contact Address	_____
Address Type:	_____
Address:	_____
City:	_____
State or Province:	_____
Postal Code:	_____
Country:	_____
Process Contact Voice Telephone:	_____
Process Contact TDD/TTY Telephone:	_____
Process Contact Facsimile Telephone:	_____
Process Contact E-Mail Address:	_____



### ***Search Interfaces***

Search Interface Improvement

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Evaluation Date

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Evaluation Result

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Implementation Date (if required)

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Search Technical Contact Organization:

---

Search Technical Contact Person:

---

Search Technical Contact Position:

---

Search Technical Contact Address

---

Address Type:

---

Address:

---

City:

---

State or Province:

---

Postal Code:

---

Country:

---

Search Technical Contact Voice Telephone:

---

Search Technical Contact TDD/TTY Telephone:

---

Search Technical Contact Facsimile Telephone:

---

Search Technical Contact E-Mail Address:

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### ***Distribution Information***

Distribution Mechanism Improvement

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Evaluation Date

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Evaluation Result

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Implementation Date (if required)

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### ***Performance***

SIP identified as ready at Producer <> SIP  
transferred to Archive

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SIP ingested to Archive <> AIP created

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